

ABSTRACT

The present invention provides an acidic aqueous composition useful for polishing tungsten and titanium on a semiconductor wafer comprising by weight percent 0.5 to 10 abrasive, 0.5 to 9 oxidizer, 0.1 to 5 complexing agent, 0.1 to 5 chelating agent and balance water, wherein the abrasive is fumed silica that has a surface area of greater than 90 m²/g and has only been exposed to an acidic pH.